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ABSTRACT

An investigation was conducted to ascertain the effects of the structured overview on both the short-term and long-term comprehension of average and below average readers. The subjects were 143 college students classified as average or below average readers and randomly assigned to either a structured overview (65) or a control group (78). Both groups read an article of college level difficulty; students in the structured overview group completed a prereading, teacher-guided discussion of major concepts from the article as they were depicted on the overview. Both groups completed a ten-item multiple choice test on the article immediately following the reading and again one week later. Results showed a significant difference in short-term comprehension favoring the structured overview over the control group, and a significant difference in short-term comprehension favoring average readers over below average readers in both groups. There was no significant difference between the groups on the long-term measure. The differential effect of the overview for average and below average readers suggests that reading achievement is an important independent variable in investigations of adjunct learning aids. (TJ)

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The Influence of a Structured Overview on University Students' Short and Long Term Comprehension [1]

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The Influence of a Structured Overview on University Students' Short and Long Term Comprehension

The theory of meaningful reception learning advanced by Ausubel (1960) characterized an individual's cognitive structure as an hierarchical ordering of concepts, progressing from the most general to the more discrete. As new concepts are encountered, they may be subsumed by the individual's existing cognitive structure. Thus, the degree to which new material is learned and retained ought to be directly related to the active development of this subsumption process.

In order to investigate this subsumption theory, Ausubel (1960) constructed a pre-reading advance organizer containing a highly general discussion of concepts to be encountered in greater detail on a subsequent text reading. Ausubel found that college students receiving the advanced organizer achieved higher post-reading comprehension scores than a control group. He attributed the advance organizer groups' higher comprehension to two factors consistent with subsumption theory. The advance organizer activated the students' prior knowledge about the topic and it provided a framework for the reception of new material.

Barron (1969) introduced a form of advance organizer called the structured overview. The structured overview is a graphic representation of the key vocabulary in a unit or reading selection. As such, it reflects hierarchical relationships between major concepts and supporting details. Research with this form of advance organizer has been confined

largely to content area classrooms with inconsistent findings across various studies (Baker, 1977).

In a comprehensive review of 52 advance organizer investigations completed since Ausubel's initial study, Baker (1977) noted that over 20 different forms of advance organizers were employed with equally diverse criterion measures used to appraise comprehension. Indeed, unlike the data banks that currently exist in miscue analysis (Allen and Watson, 1976), and those developing in discourse analysis (Freedle, 1977), advance organizer research remains equivocal at best.

Baker (1977) suggested that advance organizer research might profit from longer range, applied classroom studies. In addition, other relevant independent variables such as reaching achievement, student interests, and prose characteristics might be taken into account. In this way, a reliable data bank can be constructed that affords the sort of strong inferences about the reading process and classroom practice now possible from miscue analysis.

A previous exploratory study involving the use of a structured overview was conducted in an effort to begin constructing a body of applied classroom data specifically related to the university reading improvement setting (Bean, 1978). In this preliminary study, students who received a structured overview prior to the reading of a Health Education article (McPherson, 1972) achieved significantly higher post-reading comprehension scores than a control group ($p < .05$). In this exploratory study, only short term comprehension was measured and no effort was made to account for possible differences in reading achievement.

The present follow-up study was designed to replicate and extend the previous investigation. Specifically, the following four questions were explored:

(1) Would there be a statistically significant difference ($p < .05$) in short term comprehension for structured overview and control groups?

(2) Would there be a statistically significant difference ($p < .05$) in short term comprehension between average and below average readers in structured overview and control groups?

(3) Would there be a statistically significant difference ($p < .05$) in long term comprehension for structured overview and control groups?

(4) Would there be a statistically significant difference ($p < .05$) in long term comprehension between average and below average readers in structured overview and control groups?

Method

The subjects in this study were 143 freshman and sophomore university students enrolled in a reading improvement course. The students were classified into two groups, average or below average readers, according to comprehension scores on the Diagnostic Reading Test (1967) administered at the beginning of the quarter. Students with total comprehension scores of 27 and above were designated average readers ($n = 40$), and those with scores less than 27 were considered to be below average readers ($n = 103$).

Subjects were randomly assigned to either structured overview (n = 65) or control groups (n = 78). Both groups received the Health Education article (McPherson, 1972) used in the previous study (Bean, 1978). The article was from a representative collection of college reading improvement selections. It was estimated to be of college level difficulty on the Fry Graph (1978) and dealt with the topic of air pollution from an alarmist point of view.

Students in the structured overview group completed a pre-reading, teacher-guided discussion of major concepts and relationships from the article as they were depicted on the overview. Following a reading of the selection, both groups completed a researcher designed 10 item multiple choice recognition test. The test included literal and interpretive level questions (Herber, 1978). Long term comprehension was tested on an unannounced basis one week later with an alternate form of the first 10 item instrument.

Results

The mean scores on the short term comprehension test for structured overview and control groups were 6.10 and 5.48 respectively. An analysis of variance revealed a significant difference in short term comprehension between structured overview and control groups (F (1,141) = 5.06, $p < .05$).

Taking reading achievement into account, the mean scores on the short term test for average readers in the structured overview and control groups were 6.60 and 5.94 respectively. Mean scores for below average readers in structured overview and control groups were 5.83 and 5.36. An analysis of variance revealed a significant difference in

short term comprehension among average and below average readers in structured overview and control groups (F (3,139) = 3.42, p = < .05).

On the surface, the results of this portion of the present study appear to confirm the findings of the previous, short term investigation (Bean, 1978). That is, in general a structured overview seems to facilitate university students' short term comprehension of a reading selection. However, on a post hoc Scheffé test comparing the four group means, only one comparison reached significance. Average readers who received the structured overview achieved a significantly higher mean comprehension score on the short term test than below average readers in the control group (difference = 1.25, p < .01). Thus, reading achievement was a significant factor in this study, particularly in the application of a structured overview as an aid to short term comprehension.

On the long term comprehension test, the means for structured overview and control groups were 3.80 and 3.55 respectively. There was no significant difference between structured overview and control groups on the long term measure (F (1,141) = .86).

The mean scores on the long term test for average readers in the structured overview and control groups were 4.00 and 4.23. Mean scores for below average readers in structured overview and control groups were 3.69 and 3.36. The analysis of variance encompassing reading achievement and the effect of the overview on long term comprehension was nonsignificant (F (3,139) = 1.84). Thus, the overview failed to function as an aid to retention for both average and below average readers.

Discussion

The findings of the present study lend some support to the previous investigation (Bean, 1978). As in the first study, the structured overview continued to have a facilitative effect on university students' short term comprehension of the Health Education article. However, the differential effect of the overview for average and below average readers suggests that reading achievement is an important independent variable in applied, classroom investigations of adjunct learning aids. It appears that average readers in the present study were better able to assimilate and apply the overview as a short term comprehension aid than their below average peers.

This finding is consistent with current reviews of research comparing good and poor readers in terms of information processing strategies. Guthrie and Tyler (1978) noted that good readers are better able to recreate the structure of a reading selection than poor readers. In a recent study on discourse processing, Marshall and Glock (1978) found that fluent university readers generated more complete short term propositional recall protocols than their less fluent community college peers. Fianlly, Sullivan (1978) noted that good readers are generally better able to make use of adjunct aids to learning than poor readers.

The aforementioned statements regarding below average readers' comprehension strategies must be tempered by the fact that they are based on short term, often "one-shot" investigations. Rickards (1976) suggested that studies involving repeated exposure to the use of

adjunct learning aids, specifically advanced organizers, may yield facilitative effects for below average readers. Indeed, the short range nature of the present study may be responsible for the absence of any facilitative effects on the long term comprehension test.

Both average and below average readers in the structured overview and control groups declined on the second form of the test administered one week after reading the Health Education selection. This drop in comprehension may have been due to the uniqueness of the structured overview pre-teaching in contrast to the usual curriculum of this particular reading improvement program. Students were typically engaged in self-paced contractual learning in kit and workbook materials rather than the large group format used in the study. This limitation suggests that the long term findings in the present study need further investigation before any strong inferences can be made about the effect of a structured overview on long term comprehension.

In order to more accurately measure the effect of structured overviews on average and below average readers' long term comprehension, Rickard's (1976) recommendation of repeated exposure to the strategy under investigation should be adopted in the design of any further advance organizer research. In this way, a reliable data bank can be constructed that will afford strong inferences about the use of adjunct learning aids in a variety of instructional settings.

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